

IAF SPACE SYSTEMS SYMPOSIUM (D1)

Lessons Learned in Space Systems: Achievements, Challenges, Best Practices, Standards. (5)

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THE STUDY ON THE RELIABILITY INCREASING OF NEWLY DEVELOPED SPACE
TECHNOLOGY**Abstract**

Not only commercial use of space but also the importance of national security, as well as the active participation of private companies in space technology development, the importance of space technology is increasing in the national strategic and industrial aspect. As the development of small and cube satellites with various sensors is actively and competitively conducted in accordance with attempts to utilize space in various ways, the importance of self-sufficiency in satellite development technology required for space development is gradually being emphasized. In that sense core technologies are also being developed in Korea through the Space Pioneer program from 2021. The goal of core technology developed is TRL(Technology Readiness Level) 7 which is QM(Qualification Model) that completed the space environment test. However, there is no in-orbit space certification(guarantee) or space heritage, so the risk is high to directly apply to actual satellite systems. In Korea, based on the experience so far, several space projects are being planned to increase reliability and provide opportunities for space heritages. As a preliminary attempt the Performance verification satellite(PVSat) which was launched by the Korean launch vehicle, Nuri in 2022, is securing space history by loading core technology for a similar purpose. In this paper, the current status of space key technologies developed through the Space Pioneer Program are described and the reliability or space heritage of core technologies in PVSat are analyzed with on-orbit test results.